TM 11-5830-239-15

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR, ORGANIZATIONAL, DIRECT SUPPORT,
GENERAL SUPPORT, AND DEPOT MAINTENANCE MANUAL
INCLUDING REPAIR PARTS AND SPECIAL TOOL LISTS

PUBLIC ADDRESS SET AN/PIQ-5A

HEADQUARTERS, DEPARTMENT OF THE ARMY

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OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE MANUAL

PUBLIC ADDRESS SET AN/PIQ-5A

(NSN 5830-00-985-9033)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS
You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703.
In either case a reply will be furnished direct to you.

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CHAPTER 1

INTRODUCTION

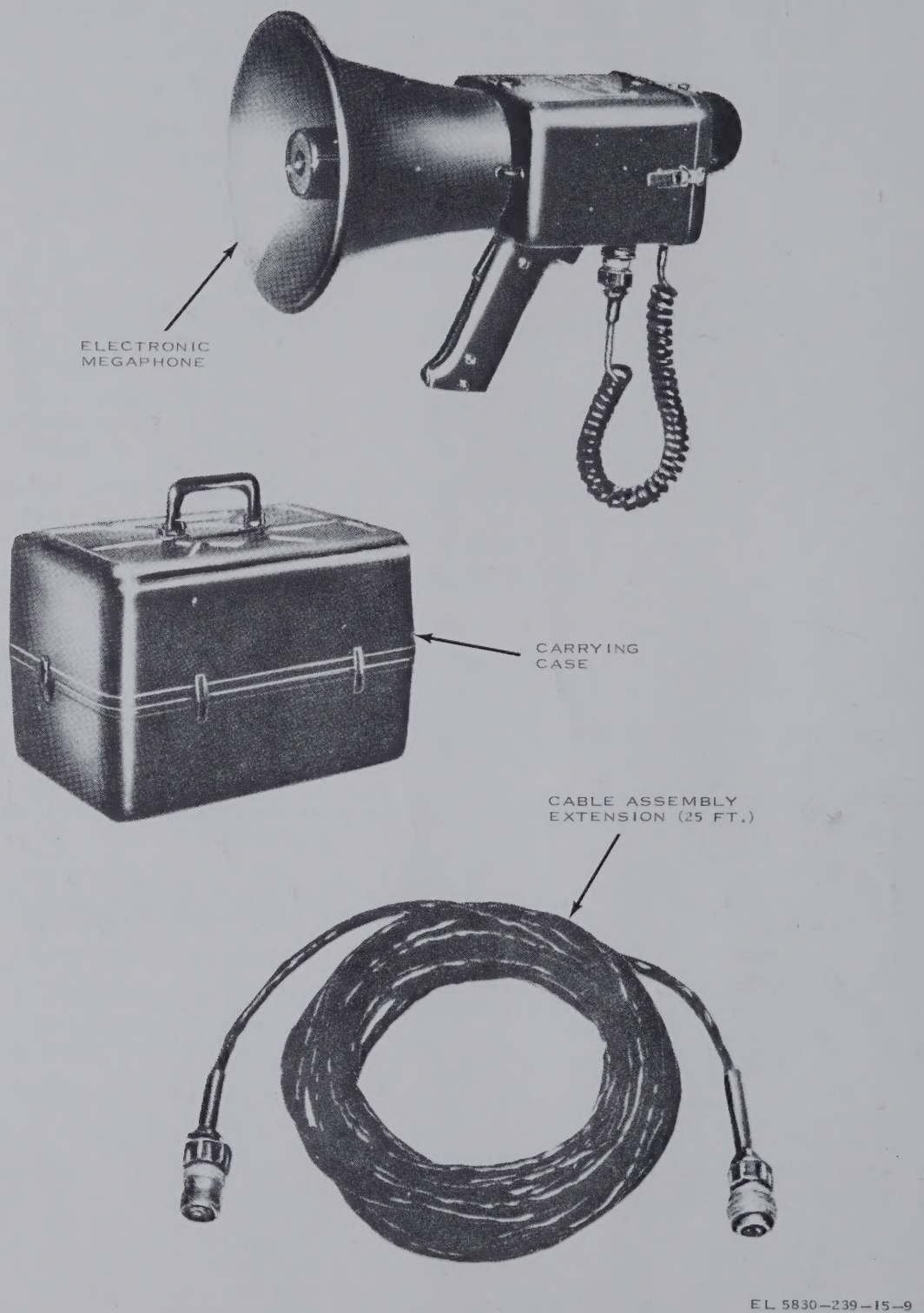

Figure 1-1. Public Address Set AN/PIQ-5A.

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

a. This manual describes Public Address Set AN/PIQ-5A (public address set) (fig. 1-1) and covers the installation, operation, and maintenance of the equipment. The manual includes instructions of cleaning, inspection, testing, and replacement of parts authorized for operator, organizational, direct support (DS), general support (GS), and depot maintenance.

b. Appendix B contains the basic issue items list (BIIL) and appendix C contains the maintenance allocation chart (MAC). Repair parts and special tools list (RPSTL) appears in TM 11-5830-239-14P.

c. Appendixes B, C, and D are current as of 26 November 1968.

1-2. Consolidated Index of Army Publications and Blank Forms

Refer to the latest issue of DA Pam 310-1 to determine whether there are new editions, changes or additional publications pertaining to the equipment.

1-3. Maintenance Forms, Records, and Reports

a. Reports of Maintenance and Unsatisfactory Equipment. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750, The Army Maintenance Management System.

b. Report of Packaging and Handling Deficiencies. Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 4140.55/NAVMATINST 4355.73A/AFR 400-54/MCO 4430.3F.

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33C/AFR 75-18/MCO P4610.19D/DLAR 4500.15.

1-3.1 Reporting Equipment Improvement Recommendations (EIR)

If your Public Address Set AN/PIQ-5A needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703. We'll send you a reply.

1-3.2 Administrative Storage

Administrative Storage of equipment issued to and used by Army activities will have preventive maintenance performed in accordance with the PMCS charts before storing. When removing the equipment from administrative storage the PMCS should be performed to assure operational readiness. Disassembly and repacking of equipment for shipment or limited storage are covered in chapter 8.

1-3.3 Destruction of Army Electronics Materiel

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

Section II. DESCRIPTION AND DATA

1-4. Purpose and Use

a. Purpose. Public Address Set AN/PIQ-5A is a portable handheld unit for amplifying the human voice.

b. Use. Public Address Set AN/PIQ-5A is used to extend the audible distance of the human voice when addressing large groups of persons. It is also used when addressing persons over distances too far for the unaided voice to be heard and understood.

1-5. Technical Characteristics

The technical characteristics of Public Address Set AN/PIQ-5A are given below:

Power output	15 watts.
Input impedance	400 ohms.
Output impedance	10 ohms.
Amplifier gain	46 db.

1-6. Components of Public Address Set AN/PIQ-5A

The chart below lists the components of Public Address Set AN/PIQ-5A.

1-6.1 Items Comprising an Operable Public Address Set AN/PIQ-5A

NSN	*QTY*	*Nomenclature, part No., and mfr code*
		NOTE The part number is followed by the applicable 5-digit Federal supply code for manufacturer, (FSCM) identified in SB 708-42 and used to identify manufacturer, distributor, or Government agency, etc.
		NOTE Dry batteries shown are used with the equipment but are not considered part of the equipment. They will not be preshipped automatically but are to be requisitioned in quantities necessary for the particular organization in accordance with SB 11-6.
5830-00-907-5183	1	Loudspeaker Assembly: 521059; 12431
5965-00-908-1402	1	Microphone Assembly, Magnetic: 521042; 12431
5965-00-834-1533	1	Cable assembly, Special Purpose, Electrical (25 ft lg extension) 521057; 12531
6135-00-120-1020		Battery BA-30: (1.5 v)

Quantity per equipment	*Item*
1	Electronic megaphone.
1	Microphone assembly, magnetic.
1	Cable assembly, special purpose, electrical (25-ft long extension).
1	Carrying case.

1-7. Description of Public Address Set

a. General. The public address set is a portable unit consisting of an electronic megaphone with a microphone that can be handheld or attached to the unit. An extension cable supplied with the public address set permits use of the microphone at distances up to 25 feet from the megaphone.

b. Megaphone. The electronic megaphone (fig. 1-2) consists of a horn loudspeaker and a housing, which contains a transistor amplifier and a power supply of ten 1½-volt batteries. A pistol grip handle with a built-in trigger switch is bolted to the housing. A tapped hole at the bottom of the handle permits mounting of the electronic megaphone to a stand. (This stand is not provided as part of the public address set.) A rear cover on the housing is fitted with a snap-in mount for a hand microphone. A carry strap (not shown) is also furnished and can be attached to D-rings on the megaphone housing.

NOTE

Battery BA-30 should be used with the AN/PIQ-5A. It is not furnished with the equipment.

c. Microphone. The microphone (fig. 1-3) is fitted with a coiled cord cable (W1) and a connector which mates with a receptacle on the electronic megaphone housing. The microphone may be locked to the megaphone, permitting use of the megaphone as a completely portable unit. The microphone may also be detached from the megaphone and used as a separate handheld unit by means of the coiled cord cable or the extension cable. The coiled cord cable allows the microphone to be used at distances up to 3 feet from the electronic megaphone. The extension cable permits use of the microphone at distances up to 25 feet from the electronic megaphone.

Figure 1-3. Microphone.

CHAPTER 2

INSTALLATION AND OPERATION

Section I. INSTALLATION

2–1. General

Installation procedures for the public address set will be dependent upon local operating conditions or tactical situations. When packaged for shipment, the components of the public address set are placed in the carrying case. The carrying case is then placed in a cardboard box and sealed with tape.

2–2. Uncrating, Unpacking, and Checking Equipment

Each public address set is packed individually in a cardboard carton. To unpack the unit, place the carton in an upright position and slit the tape securing the carton. Remove the public address set carrying case. The electronic megaphone, the microphone, and the extension cable are shipped in the carrying case. Release the six snap fasteners securing the cover of the carrying case and open the case. Check the equipment against the list of items on the carton to make certain that all items have been received. If there is no list, refer to appendix B (BIIL). Visually inspect each item of the equipment for signs of shipping damage such as dents, cracks, chipped paint, frayed cables, etc. Report any damage or shortages in accordance with paragraph 1–3.

2–3. Installation of Public Address Set

If the address set is to be used as a portable equipment, the only installation required is that for the batteries. The batteries are housed at the rear of the unit. To remove the rear cover, release the two snap fasteners that secure the cover to the housing and lift off the cover. To install the batteries, refer to figure 2–1 and follow the diagram exactly. The smaller circles represent the positive terminal of the batteries. If the megaphone is to be fastened to a stand, and the microphone used at a distance from it, proceed as follows:

a. Remove the microphone connector from the mating plug on the megaphone housing.

b. Fasten the megaphone to the stand with a 1/4- by 20- by 3/8-inch machine screw or a stand that has a bolt of this size.

c. Connect the female end of extension cable to the microphone, and the male end to the receptacle on the megaphone housing.

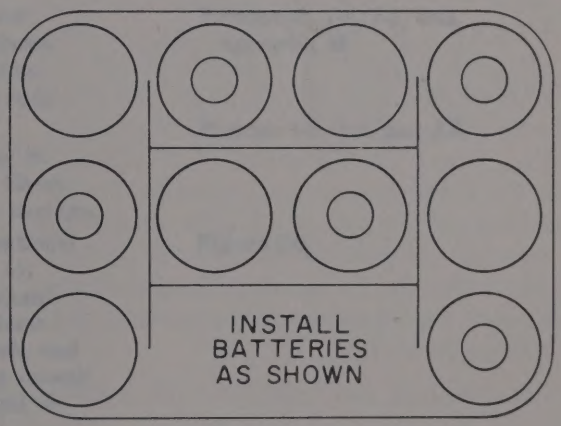

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Figure 2–1. Battery installation.

Section II. OPERATING INSTRUCTIONS

2–4. Controls and Connectors (fig. 3–1)

The following table lists the controls of the megaphone and describes their function. A microphone connector is provided on the bottom of the amplifier housing.

Table 3-1. Operating Controls

Reference designation	Name	Function
S1	Power ON pushbutton switch.	Located at top of microphone. Energizes equipment when depressed. Used when microphone is used as a separate handheld unit.
S2	Power ON trigger switch.	Located on pistol grip. Energizes equipment when microphone and megaphone operate as single unit.
R1	Volume control	Varies volume of electronic megaphone.

2-5. Preliminary Operating Procedures

Prior to operation, be sure that the microphone cable is connected to the connector on the megaphone housing and that the batteries are inserted as described in paragraph 2-3 and as illustrated in figure 2-1. With the hand microphone in place on the amplifier cover, raise the complete unit so that the rubber mouthpiece is close to the operator's mouth. Operate the trigger switch on the handle with the first or second finger of the hand that is holding the handle. If the system *feeds back* (howls or squeals), reduce the gain by turning the volume control (R1) counterclockwise until the howling stops. If there is no feedback, increase the gain while test-counting into the microphone. Adjust the volume control to a point just before feedback begins or until a satisfactory volume is obtained. *To conserve battery life, press the switch only when actually transmitting a message.*

2-6. Operation

Direct the horn toward the listening personnel. Pull the trigger switch on the handle or push the pushbutton switch on the microphone. Speak slowly and clearly, enunciating each word. Release the trigger switch or the pushbutton switch immediately upon completion of the message. Refer to figure 3-1.

CHAPTER 3

OPERATOR'S MAINTENANCE INSTRUCTIONS

3-1. Scope of Maintenance

The following is a list of maintenance duties normally performed by the operator of the electronic megaphone. These procedures do not require special tools and test equipment.

a. Preventive maintenance (para 3-2).

b. Cleaning (para 3-3).

c. Visual and operational check (para 2-5, 2-6, and 3-2).

3-2. Preventive Maintenance

Preventive maintenance is the systematic care, servicing, and inspection of the equipment to prevent the occurrence of trouble, to reduce repair time, and to assure that the equipment is serviceable.

a. Systematic Care. The procedures given in *b* and *c* below cover systematic care essential to proper upkeep and operation of the equipment. The cleaning operations (para 3-3) should be performed daily during periods of use, and weekly during an extended shutdown period.

b. Preventive Maintenance Checks and Services. The daily preventive maintenance checks and services chart (*c* below) outlines inspection to be made daily during periods of use, and after periods of nonuse. These inspections and the operational checks (para 3-4) are made to determine serviceability. The chart indicates what to inspect, how to inspect, and the normal conditions.

c. Daily Preventive Maintenance Checks and Services Chart. The items listed below should be checked on a daily basis during periods of use. After long periods of nonuse, the checks and services should be performed before each use.

Sequence No.	Item to be inspected	Procedure	Reference
1	Public address set ____	Check the equipment for completeness, cleanliness, and proper installation. Check for dents and rust.	Paragraph 1-6, 2-1, and appendix B.
2	Connections and connectors.	Check to see that the microphone connector is properly connected. Check microphone cable for damage.	Figures 1-3, 6-2, and 6-3.
3	Knobs and switches __	While making the operational check (sequence No. 5), observe that the mechanical action of the volume control, trigger switch, and microphone switch is smooth and free from external or internal binding.	Figure 3-1.
4	Batteries _____	Replace defective batteries.	Figure 2-1.
5	Electronic megaphone.	Pull the trigger switch and talk into the microphone while adjusting the volume control. Release the trigger switch. Push the microphone push-to-talk switch and talk into the microphone.	Figure 3-1.

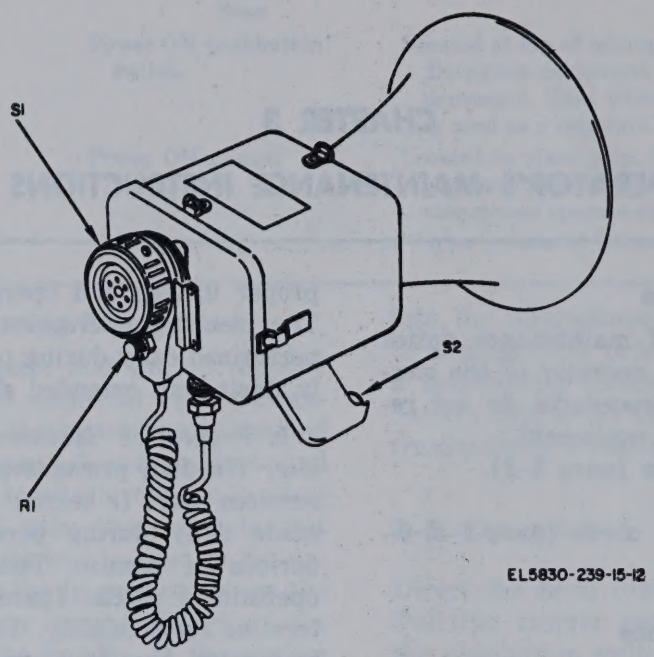


Figure 3-1. Operating Controls.

3-3. Cleaning

Inspect each item of the public address set for cleanliness. The equipment should be free of dust, dirt, grease, and fungus.

WARNING

Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.

a. Remove dust and loose dirt with a clean, soft cloth. If necessary, dampen the cloth with cleaning compound and wipe the parts; then use a clean, dry cloth to remove the residue from the parts.

b. Remove dust or dirt from the plugs and connectors with a brush.

c. Clean the control knob, trigger handle and trigger, microphone case, snap fasteners, megaphone case, and all other external surfaces with a soft, clean cloth. A mild detergent may be applied with a cloth to remove grease.

d. Clean the microphone cable and the extension cable with a dry cloth.

3-4. Operational Checks

Refer to chapter 2 for operational checks. The operator of the electronic megaphone can determine if the equipment is operating normally. If the operation is abnormal, refer the equipment to higher category maintenance for repair.

CHAPTER 4

ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

4-1. Scope of Organizational Maintenance

Organizational maintenance for the public address set consists of the following:

a. Preventive maintenance (para 4-3).
b. Monthly checks and services (para 4-5).
c. Quarterly checks and services (para 4-6).
d. Replacement of microphone.
e. Replacement of cable.

4-2. Materials and Test Equipment

The test equipments authorized for organizational maintenance are Multimeter ME-26B/U and Multimeter TS-352B/U. The materials required are a lint-free cleaning cloth and cleaning compound.

4-3. Preventive Maintenance

a. Preventive maintenance is the systematic care, inspection, and servicing of equipment to maintain it in serviceable condition, prevent breakdowns, and assure maximum operational capability. Preventive maintenance is the responsibility of all maintenance categories concerned with the equipment and includes the inspection, testing, and repair or replacement of parts that inspection and tests indicate would probably fail before the next scheduled periodic service. Preventive maintenance service and inspections of the electronic megaphone are made monthly and quarterly, unless otherwise directed by the commanding officer.

b. Maintenance forms and records to be used and maintained on this equipment are specified in TM 38-750.

4-4. Monthly Maintenance

Perform the maintenance functions indicated in the monthly preventive maintenance checks and services chart (para 4-5) once each month. A month is defined as approximately 30 calendar days of 8-hour-per-day operation. If the equipment is operated 16 hours per day, the monthly preventive maintenance checks and services should be performed at 15-day intervals. Adjustment of the maintenance interval must be made to compensate for any unusual operating conditions. Equipment in limited storage (requires service before operation) does not require monthly maintenance.

4-5. Monthly Preventive Maintenance Checks and Services

Sequence No.	Item to be inspected	Procedure	Reference
1	Public Address Set AN/PIQ-5A.	Clean the battery contact springs.	Figure 6-1, item 14.
2	Extension cable assembly.	Make continuity check of cable. Replace if defective.	Figure 1-1.
3	Case assembly	Replace if not serviceable	Figure 5-3.
4	Microphone assembly.	Replace the assembly if defective.	Figure 6-3.

4-6. Quarterly Checks and Services

Quarterly preventive maintenance checks and services on the electronic megaphone are required. The periodic daily and monthly services constitute a part of the quarterly preventive maintenance checks and services and must be performed concurrently (para 3-2). All deficiencies or defects will be recorded in accordance with the requirements of TM 38-750. Perform all the checks and services listed in the quarterly preventive maintenance checks and services chart (para 4-7).

4-7. Quarterly Maintenance Checks and Services Chart

Sequence No.	*Item to be Inspected*	*Procedure*	*Reference*
1	Completeness	Check to see that the equipment is complete.	Appendix B and paragraph 1-6.
2	Installation	Check to see the batteries are installed properly.	Figure 2-1.
3	Cleanliness	See that the equipment is free of dust and dirt, grease, and corrosion.	
4	Obvious defects	Inspect the equipment for obvious defects.	
5	Publications	See that all publications are complete, servicable, and current.	DA Pam 310-1

4-8. Troubleshooting

a. General. Troubleshooting of the public address set at the organizational category consists of isolation of a trouble to the electronic megaphone, the microphone, or the extension cable. If the defect is within the scope of the operator or organizational maintenance, the repair will be accomplished by that category of maintenance. Defects beyond the scope of organizational maintenance will be referred to higher category of maintenance. Troubleshooting performed at the organizational category can determine which item of the public address kit is defective.

b. Procedure. Troubleshooting of the electronic megaphone at this category of maintenance consists of localizing a trouble to the microphone assembly, the electronic megaphone, or the extension cable. These troubles can usually be found by observation during operation. Be sure that the batteries are correctly inserted in the spaces provided. The correct position of each cell is shown on the cover contact board. Check for good contact of batteries with the contact springs. Check the operation of each of the controls. Operate the trigger switch. The microswitch in the handle will click if the trigger is actuating it properly. If the system is operated from the hand microphone, first check the pushbutton. The pushbutton on the hand microphone actuates a microswitch within the microphone housing. A click will also be heard if the microswitch in the microphone housing is being actuated properly. Motion of the pushbutton should be smooth and free from binding. If the motion is stiff, clean and lubricate the shaft. Make certain that the volume control is not in the lowest position (fully counterclockwise). If the equipment is still inoperative, higher category of maintenance is required.

CHAPTER 5

FUNCTIONING OF PUBLIC ADDRESS SET

Section I. BLOCK DIAGRAM ANALYSIS

5-1. General

The amplifier of the public address set is a three-stage, transformer-coupled amplifier with a push-pull power output stage. The amplifier is used to increase signal strength of audiofrequencies. The response curve (fig. 5-1) is relatively flat within the range of 500 to 20,000 cycles per second (HZ). The input signal supplied from a microphone is applied to the amplifier and coupled to a loudspeaker horn through the output transformer of the amplifier.

5-2. Block Diagram of Public Address Set

The block diagram (fig. 5-1), used to explain the functioning of the public address set, consists of the microphone, the audio amplifier and loudspeaker, and a 15-volt battery power supply. The audio amplifier powered by the battery power supply amplifies the voice commands from the microphone and applies the amplifier output to the loudspeaker for reproduction of sound. The level of amplification is adjusted by means of volume control R1. The amplifier is turned on by means of pushbutton S1 or trigger switch S2, either one of which closes the circuit between the power supply and the amplifier.

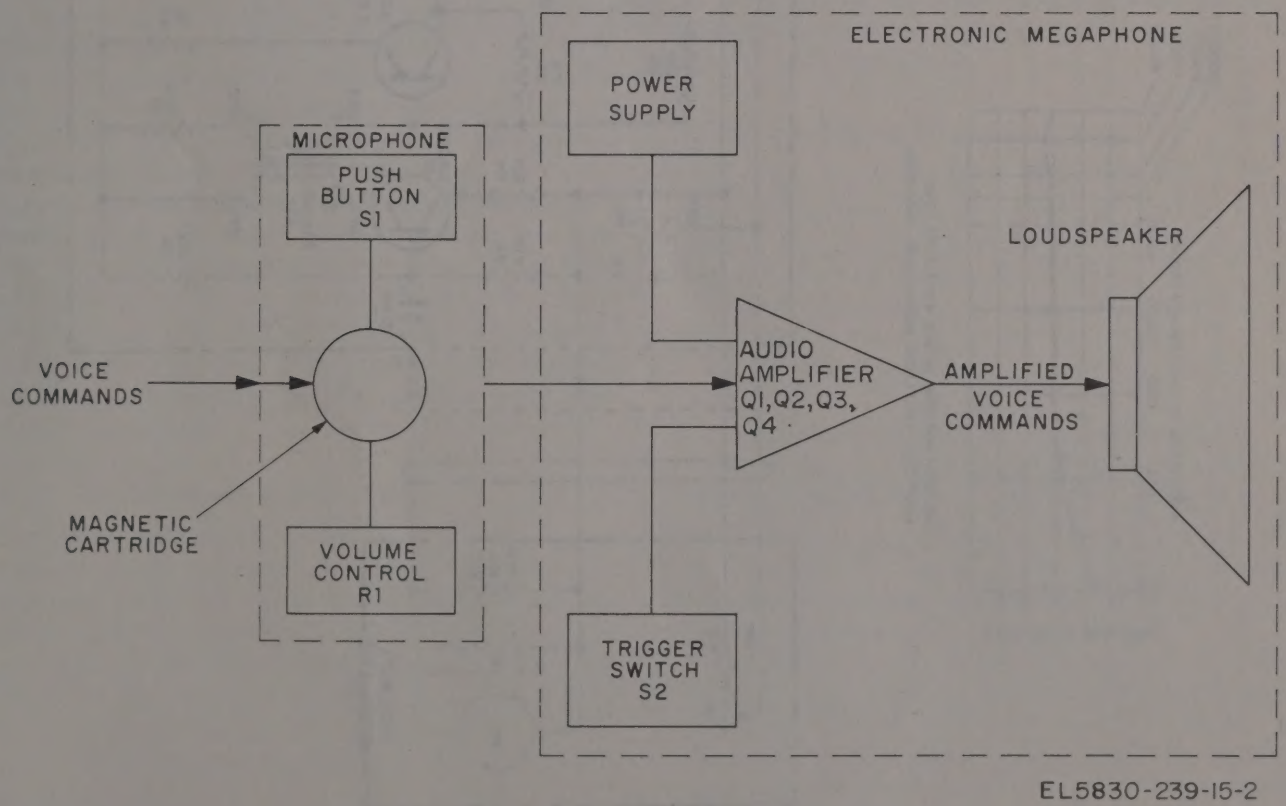


Figure 5-1. Public Address Set AN/PIQ-5A, functional diagram.

Section II. CIRCUIT DESCRIPTION

5-3. General

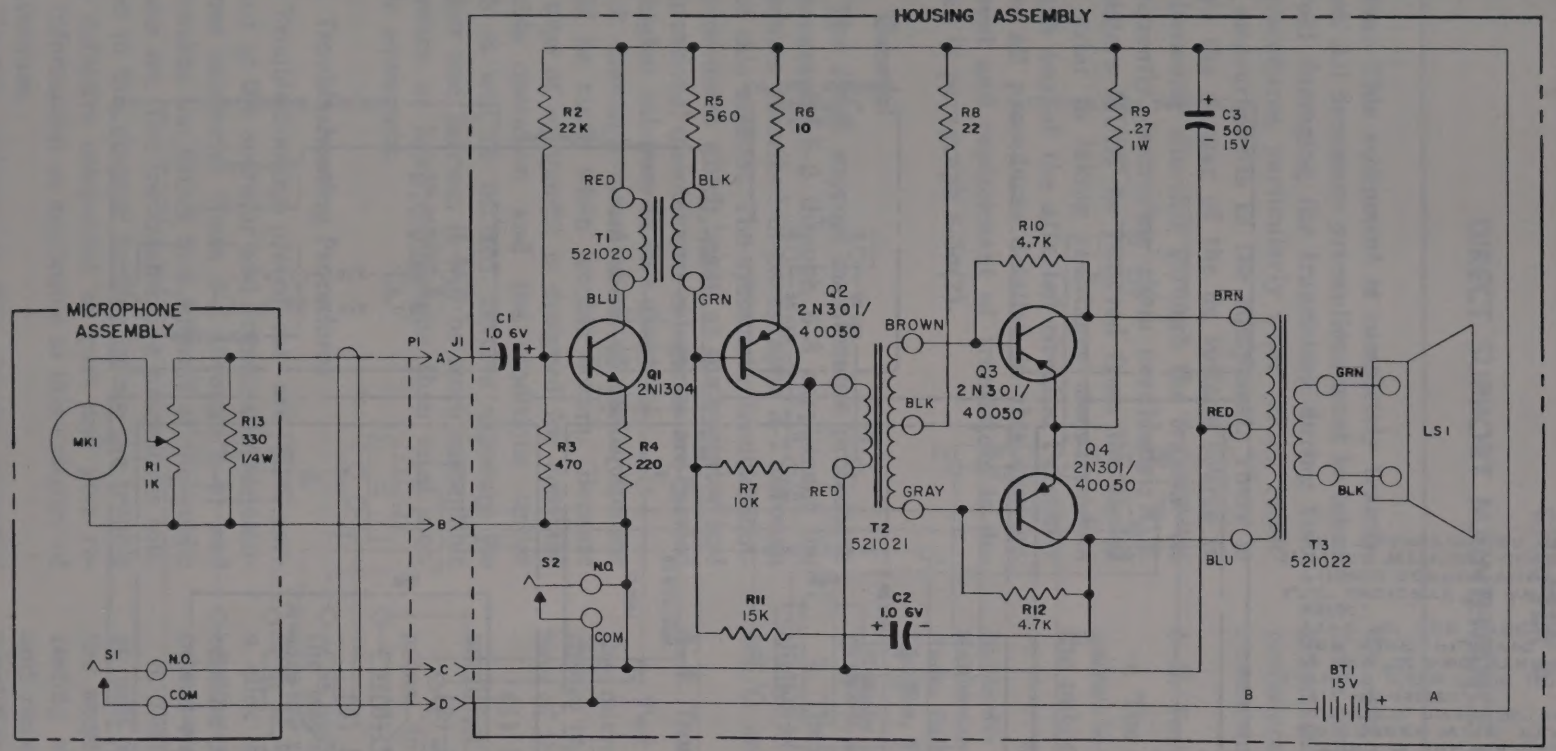
Paragraphs 5-4 and 5-5 describe the functioning of the public address set. The function of each component is described. Refer to schematic diagram of the public address set (fig. 5-2).

5-4. Microphone and Amplifier Circuit

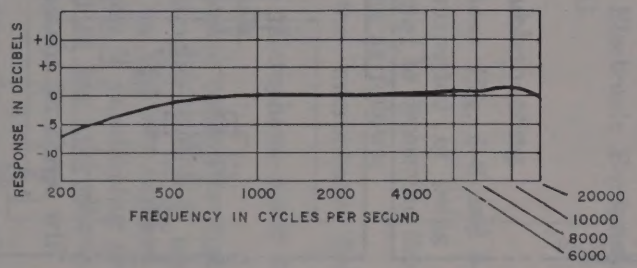
The microphone, or input transducer, which converts the operator's voice commands to electrical signals, is a magnetic microphone with an impedance of 150 ohms. A low-level signal is generated by the microphone and applied to the base of input transistor Q1 through volume control R1 and coupling capacitor C1. Input transistor Q1 and driver transistor Q2 are biased for class A operation. An emitter resistor (R4 for Q1 and R6 for Q2) is provided for stabilization of each stage. Interstage transformer T1 couples the output of Q1 to the input of driver Q2. The output of driver Q2 is coupled to power transistors Q3 and Q4 through driver transformer T2. Negative feedback is provided from collector to base in the driver and output stages through R7 for Q2 and through R10 and R12 for Q3 and Q4, respectively. Transistors Q3 and Q4 are operated in push-pull in the final or power output stage and are biased to operate as a class AB amplifier.

5-5. Dc Power Circuit

The 15-volt direct-current (dc) power is supplied from internal batteries by operating trigger S2 on the handle or pushbutton switch S1 on the microphone. These switches are parallel-connected so that dc is applied to the amplifier by the operation of either switch. The current drain from the batteries is maximum when the loudest speech signal is being amplified, since the collector current of the output stage varies with the strength of the amplified signal.



FREQUENCY AMPLITUDE RESPONSE OF AMPLIFIER BETWEEN 400 OHMS SOURCE AND 9 OHMS LOAD.



NOTES:

1. OUTPUT POWER: 15 WATTS
2. INPUT IMPEDANCE: 400 OHMS
3. OUTPUT IMPEDANCE: 10 OHMS
4. ALL RESISTORS 1/2 WATT, UNLESS SPECIFIED OTHERWISE.

EL5830-239-15-3

Figure 5–2. Public Address Set AN/PIQ–5A, schematic diagram.

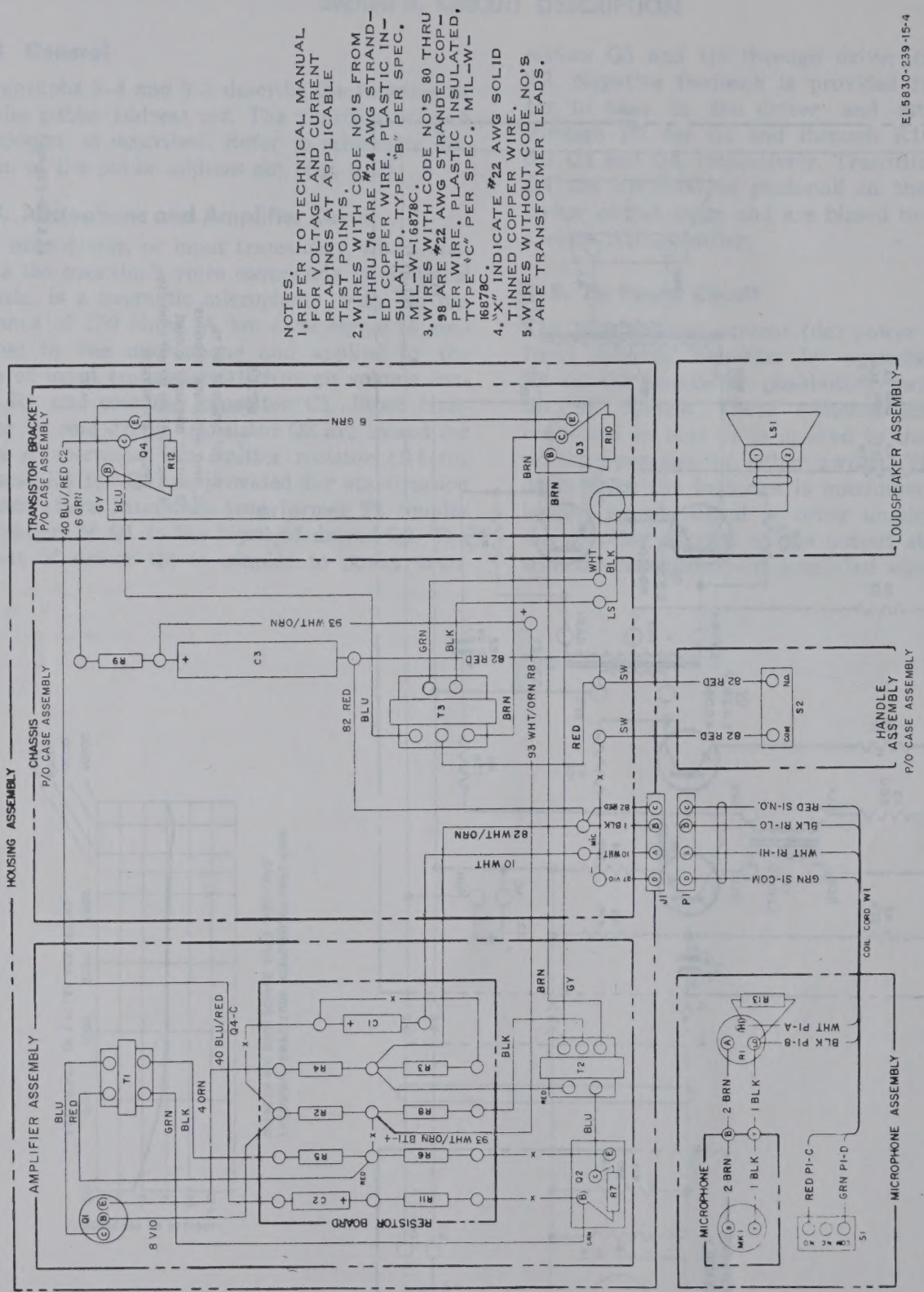


Figure 5-3. Public Address Set AN/PIQ-5A, wiring diagram.

CHAPTER 6

DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

Caution: **This equipment is completely transistorized. All necessary precautions must be taken to avoid damaging the transistors during testing procedures, particularly when taking resistance measurements in the equipment. There is always the danger of the dc voltage source in the ohmmeter shorting through the transistors, subsequently destroying them needlessly. ALL transistors MUST be removed from the equipment prior to taking resistance measurements through any of the affected circuits. Carefully follow all procedures detailed in this chapter. Removal and replacement of transistors is described in paragraph 6-5*a*(2).**

6-1. General

a. The direct support maintenance procedures in paragraphs 6-2 through 6-8 supplement the procedures described in paragraphs 3-1 through 4-8 of this manual. The systematic troubleshooting procedures which began at the operator and organizational maintenance categories are carried to a higher category in this chapter.

b. A thorough visual check of the equipment should be made when trouble occurs. Because this type of equipment is designed for constant portable operation and the conditions under which it will be utilized involve exposure to weather and jarring, it will be more susceptible to broken or loose components than most electronic equipment.

6-2. Troubleshooting Procedures

a. Troubleshooting procedures are first performed at the operator and organizational maintenance categories (para 3-1 through 3-4) and sectionalize the defect to a subunit of the public address set. The troubleshooting procedures contained in this chapter further isolate the trouble to a defective component or part and give repair information as applicable to this category of maintenance.

b. Trouble isolation in this chapter normally isolates the defect to a malfunctioning part of the unit being tested. Trouble isolation procedures entail the use of schematic and block diagrams (fig. 5-1, 5-2, and 5-3) and step-by-step procedures in making voltage and resistance measurements (para 6-5).

6-3. Test Equipment and Tools

a. The chart below lists the test equipment required to perform direct support maintenance of the public address set.

Test equipment	Technical manual
Multimeter ME-26B/U	TM 11-6625-200-15
Multimeter TS-352B/U	TM 11-6625-366-15
Audio Oscillator TS-382(*)U*	TM 11-6625-261-12
Test Set, Transistor TS-1836/U	TM 11-6625-539-15

*Indicates Audio Oscillators TS-382A/U, TS-382B/U, TS-382D/U, TS-382E/U, and TS-382F/U.

b. The tools required for maintenance are included in Tool Kits, Electronic Equipment TK-105/G and TK-100/G.

6-4. Transducer Troubleshooting

a. Test of Microphone (fig. 5-2 and 5-3). If the microphone is suspected of being faulty, checks can be performed to determine the condition of the microphone as follows:

(1) Disconnect the microphone from the amplifier.

(2) Remove the microphone cover to gain access to the terminals.

(3) Turn the volume control to high.

(4) Set the multimeter to R X 1, and place the test lead probes on the two exposed terminals. If the microphone is functioning properly, a click will be heard in the microphone and a reading of approximately 30 ohms will be obtained on the meter.

b. Test of Loudspeaker. The loudspeaker driver unit may also be checked prior to checking the amplifier unit. Set the public address set resting on the speaker horn, open the housing, and remove the batteries to gain access to the amplifier terminals. Remove the black wire and the green wire from the terminals designated

LS. Check the driver unit resistance across these terminals for a normal reading of 6 1/2 ohms. A click will also be heard in the loudspeaker when the ohmmeter leads are placed across these terminals.

6-5. Resistance and Voltage Measurements

a. Resistance Measurements.

(1) Resistance measurements are used to isolate causes of equipment malfunctioning, especially where components or wires are open or shorted or where cold solder joints prevent proper operation. Table 6-1 lists test points, components, normal indication (in ohms), and probable cause of abnormal indications. Test point A is the positive bus line of the circuit; test point B is the negative bus. All readings are in ohms and may be measured with either multimeter (para 6-3). Figure 6-2 gives the location of transistors Q1, Q2, Q3, and Q4; these must be removed prior to initiating the resistance measurement procedures to prevent possible damage to the transistors from the dc voltage in the ohmmeter. Removal and replacement of transistors is described in (2) below.

Table 6-1. Resistance Measurements

Test point	Component symbol	Normal indication (ohms)	Case of abnormal indications
B	Thru R3	450	R3 defective
B	Thru R4	210	R4 defective
A	Thru R2	2,100	R2 or shunted components defective
A	Thru R5	330	R5 defective
A	Thru R6	10	R6 defective
A	To Q1-c	710	T1 primary defective
B	To Q1-e	210	R4 defective
B	To Q2-b	1,950	Q2, R7, or T2 primary defective.
B	To Q2-b	360	T1 secondary defective
B	To Q2-c	20	T2 primary defective
A	Thru R8	22	R8 defective
A	To Q3-b	27	R8 or T2 secondary defective.
A	To Q4-b	27	R8 or T2 secondary defective.
A	Thru R9	0.3	R9 defective
A	To C3	1,700	C3 or shunted components defective
A	Thru R11	10K	R11 open or C2 defective

(2) Removal and replacement of transistors Q2, Q3, and Q4 is as follows:

(*a*) Rest the entire public address set on the open end of the speaker horn.

(*b*) Release the two spring-loaded catches. Remove the cover and the batteries.

Caution: **Connector J1 is part of the amplifier assembly and must be removed from the housing before attempting to remove the amplifier. Refer to items 1 and 2, figure 6-2.**

(*c*) Remove the four screws that secure the chassis to the mounting brackets. Pull the amplifier assembly out of the housing as far as the slack on the driver unit wires will permit.

(*d*) Place the amplifier assembly on a surface with the transistors facing up.

Caution: **Be careful not to damage the mica wafers; these insulate the transistors from the chassis.**

(*e*) Unscrew and remove the two screws securing each of the transistors to the chassis. Remove the transistors from the sockets.

(*f*) To replace, position the mica insulators (wafers) on each transistor so that the screw clearance holes line up with those in the ends of the transistor.

Caution: **Be sure that the mica wafers are not damaged.**

(*g*) Plug in the new transistors, and secure with the mounting screws.

(*h*) Replace the amplifier assembly into the housing. Be sure that the slack wire is carefully replaced as it was prior to (*c*) above.

(*i*) Replace connector J1 on the amplifier assembly by replacing the four screws, on the corners of the connector, which secure the connector to the chassis. Replace the four screws that secure the chassis to the mounting brackets.

(*j*) Replace the batteries as shown in figure 2-1. Replace the battery cover; retighten the

two spring-loaded catches on either side of the cover.

b. Voltage Measurements.

(1) Localization of trouble to a particular stage of the amplifier can be accomplished through use of voltage measurements. The table below (table 6–2) provides full-signal and no-signal values of dc voltage at points specified. The values in the *No signal* column are those obtained with transistors in the circuit, the amplifier dc source voltage connected normally, and the battery circuit closed. The *full-signal* values are the normal dc voltages obtained when the amplifier is driven by a test signal to produce an output of 15 watts. To prepare the amplifier for full-signal voltage measurements after it has been removed from the housing, follow the procedure given below. Test setup for these tests is shown in figure 6–4.

(*a*) Disconnect the snap-on connectors from the chassis, and remove the amplifier assembly from the housing (para 6–5*b*(2)).

(*b*) Connect a 1,000-HZ adjustable signal source with an impedance of from 100 to 1,000 ohms to terminals designated *MIC* (terminals A and B of J1).

(*c*) Connect a 9-ohm resistor (rated above 25 watts) across output terminals marked *LS*.

(*d*) Connect a 14-volt dc source to the plus and minus terminals of the amplifier through a 2-ampere fuse as shown in figure 6–4.

(*e*) Place the TS–352B/U range switch on the 2.5-ampere scale, and connect it in series with the fuse ((*d*) above).

(*f*) Measure the full-signal voltages as indicated in table 6–2.

Table 6–2. Voltage Measurements

From test point	To component symbol	Normal indication in volts (no signal)	Dc volts (full signal)
B	Q1–b	0.28	0.27
B	Q1–e	0.17	0.15
A	Q1–b	14.5	13.5
A	Q1–c	0.7	0.65
A	Q2–b	0.41	0.38
A	Q2–e	0.26	0.24
B	Q2–c	0.65	0.63
A	Q3–b	0.14	–0.78
A	Q4–b	0.14	–0.78

(2) To perform the *no-signal* tests, proceed as follows:

(*a*) Disconnect or turn off the signal source ((1)(*b*) above).

(*b*) Observe the dc ammeter reading. If there are no defective components or open or shorted wiring in the amplifier, the reading will be approximately 100 milliamperes.

(*c*) Measure the *no-signal* voltages as indicated in table 6–2.

(3) If the readings in (1) and (2) above are within *plus/minus 10 percent* of the suggested readings given in the table, connect the signal source and apply power as in (1)(*b*) above. Perform the next test as follows:

(*a*) Connect the multimeter (preferably the ME–26B/U) in parallel with the output connections of the signal source.

(*b*) Set the ME–26B/U to the 30-volt scale, and turn the FUNCTION switch to AC.

(*c*) Observe the dc ammeter reading. A reading of less than 1.75 amperes is acceptable. Insure that the dc battery voltage is 14 volts.

(*d*) Repeat the full-signal voltage test given in (1) above.

(4) All voltage readings must be within the *plus/minus 10 percent tolerance* stated above. If readings are abnormal, perform troubleshooting procedures as indicated in TM 11–4000.

6–6. DS Troubleshooting Procedures

a. DS troubleshooting procedures supplement those given at the operator and organizational maintenance categories; these are described in paragraphs 3–2, 4–5, and 4–7, respectively. When maintenance procedures at lower maintenance categories fail to correct defects and malfunctions in the equipment, the end item is forwarded to the DS maintenance category for additional higher category maintenance.

b. The troubleshooting chart (para 6–7) for Public Address Set AN/PIQ–5A gives specific trouble symptoms and corrective actions which relate to the equipment. Detailed guidance for gen-

eral troubleshooting techniques may be found in TM 11-4000. All repairs to the equipment are authorized by the maintenance allocation chart (MAC) (app C) for DS maintenance.

6-7. Troubleshooting Chart

Malfunction	Probable cause	Corrective action
1. No sound from the reproducer when operating the trigger switch.	*a.* Open battery contact springs	*a.* Check the condition of the springs. If they are worn and making poor contact with the battery, the contact board assembly (fig. 6-1, item 14) requires replacement.
	b. Open microswitch in the handle.	*b.* Check continuity with ohmmeter. If open (fig. 6-1, item 39), replace the switch.
	c. Dead battery	*c.* Check each of the 10 cells with a dc voltmeter. If any cell reads below 1.25 volts (fig. 6-1, item 13), replace with a new 1.5 volt D-cell.
	d. Open circuit in wiring or in driver unit.	*d.* Refer to figure 5-2. Also refer to paragraph 6-5*a*. Trace out suspected circuits with an ohmmeter.
	e. Open transistor	*e.* Test transistors Q1, Q2, Q3, and Q4 in accordance with procedures in TM 11-4000.
2. No sound from the reproducer when operating push-button switch on hand microphone.	*a.* Open battery contact springs	*a.* Refer to 1*a* above
	b. Open microswitch in the handle.	*b.* Refer to 1*b* above
	c. Dead battery	*c.* Refer to 1*c* above.
	d. Open circuit in wiring or in driver unit.	*d.* Refer to 1*d* above.
	e. Open circuit in coiled microphone cord.	*e.* Perform continuity check of the microphone assembly. Refer to figures 5-2 and 6-3.
	f. Open transistor	*f.* Refer to 1*e* above.
3. A *click* is heard, but there is no speech reproduction.	*a.* Inoperative microphone unit	*a.* Refer to 2*e* above.
	b. Open wiring	*b.* Refer to 1*d* above.
	c. Open volume control	*c.* Refer to figure 6-3, item 21. Make continuity checks to see if the control is open; if so, replace in accordance with procedures in TM 11-4000.
	d. Open transistor	*d.* Refer to 1*e* above.
	e. Open transformer	*e.* Perform continuity checks of T1, T2, or T3, as applicable. Insure that transistors Q1, Q2, Q3, and Q4 are removed (para 6-5*a*).
4. Acoustic howl (feedback) is heard at all settings of volume control.	Low (common bus) side of the volume control is open.	Perform continuity checks of R1. If open, replace or resolder in accordance with procedures in TM 11-4000.
5. Voice signals are distorted	*a.* Either or both output transistors Q3 and Q4 are open or shorted.	*a.* Test transistors in accordance with procedures in TM 11-4000.
	b. Driver transistor Q2 is open	*b.* Test transistor Q2 as described in TM 11-4000.

Malfunction	Probable cause	Corrective action
	c. Open wiring	*c.* Refer to 1*d* above.
	d. Low battery output voltage	*d.* Refer to 1*c* above.
	e. The power transistor bracket (Q3/Q4) (fig. 5–3) is shorted to the case assembly.	*e.* Perform visual inspection of suspected bracket, and perform continuity checks in accordance with TM 11–4000.
	f. Open transformer	*f.* Refer to 3*e* above.
6. Voice output volume is weak	*a.* Volume control is unintentionally turned very low.	*a.* Adjust volume control for desired strength or audio output.
	b. Open volume control	*b.* Refer to 4 above.
	c. Inoperative microphone unit	*c.* Perform continuity checks of microphone element MK1 and resistors R1 and R13, as required. Replace defective components in accordance with procedures in TM 11–4000.
	d. Open or shorted wiring	*d.* Refer to 1*d* above.
	e. Low battery output voltage	*e.* Refer to 1*c* above.
	f. One or more transistors are open or shorted.	*f.* Refer to 1*e* above.
	g. Open transformer	*g.* Refer to 3*e* above.
	h. Open resistor	*h.* Refer to 1*d* above.
7. Public address set functions normally except when cable assembly extension is used.	One or more wires, or pins in the connector(s), are open or shorted.	Perform continuity checks of the cable (fig. 1–1). (Refer to TM 11–4000.)

6–8. Exploded View Illustrations

Figures 6–1, and 6–3 illustrate the parts described in the Repair Parts and Special Tools List (RPSTL) (app D). These figures are necessary for repair and replacement of the equipment at the DS, GS, and depot maintenance categories.

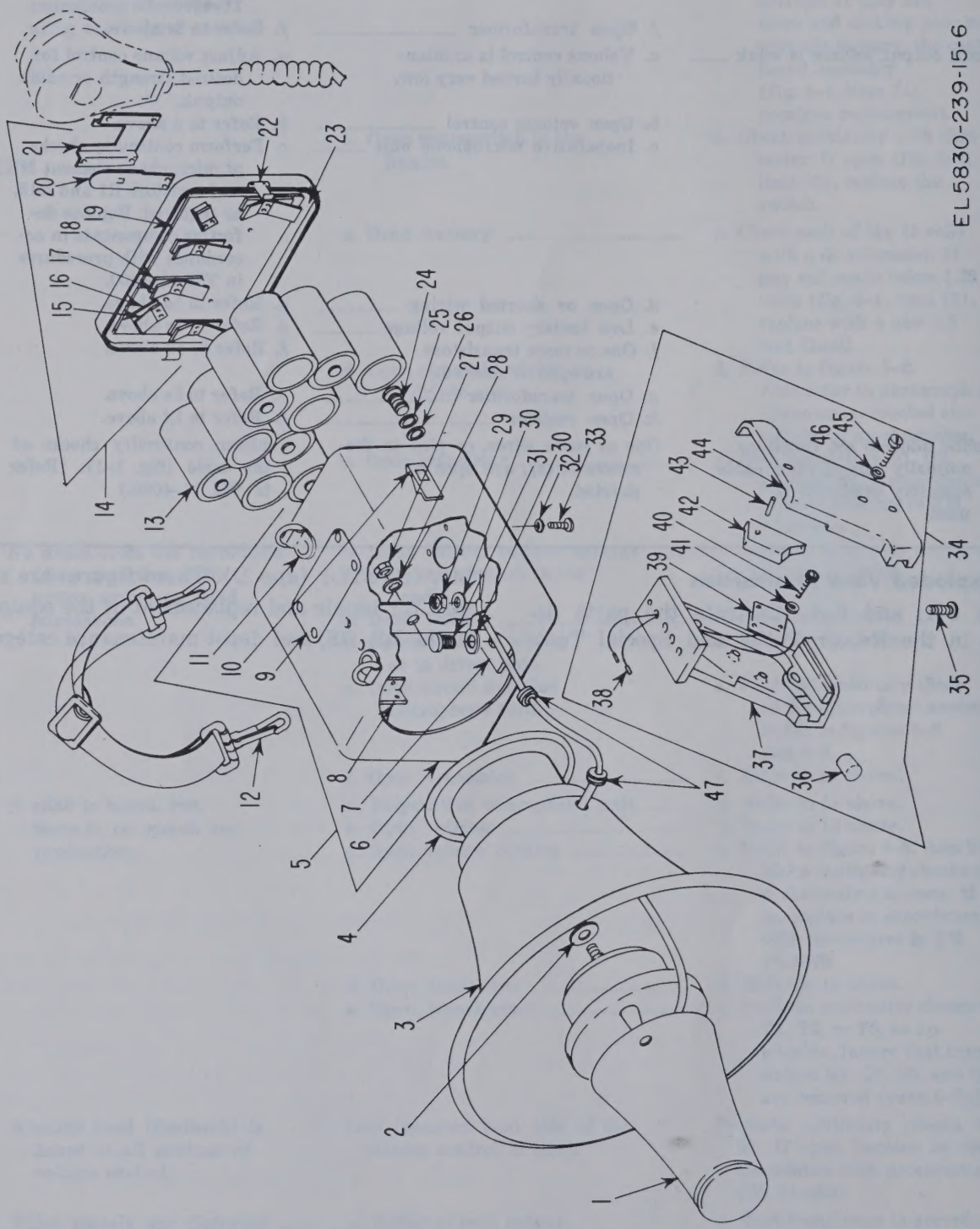


Figure 6-1. Electronic megaphone assembly.

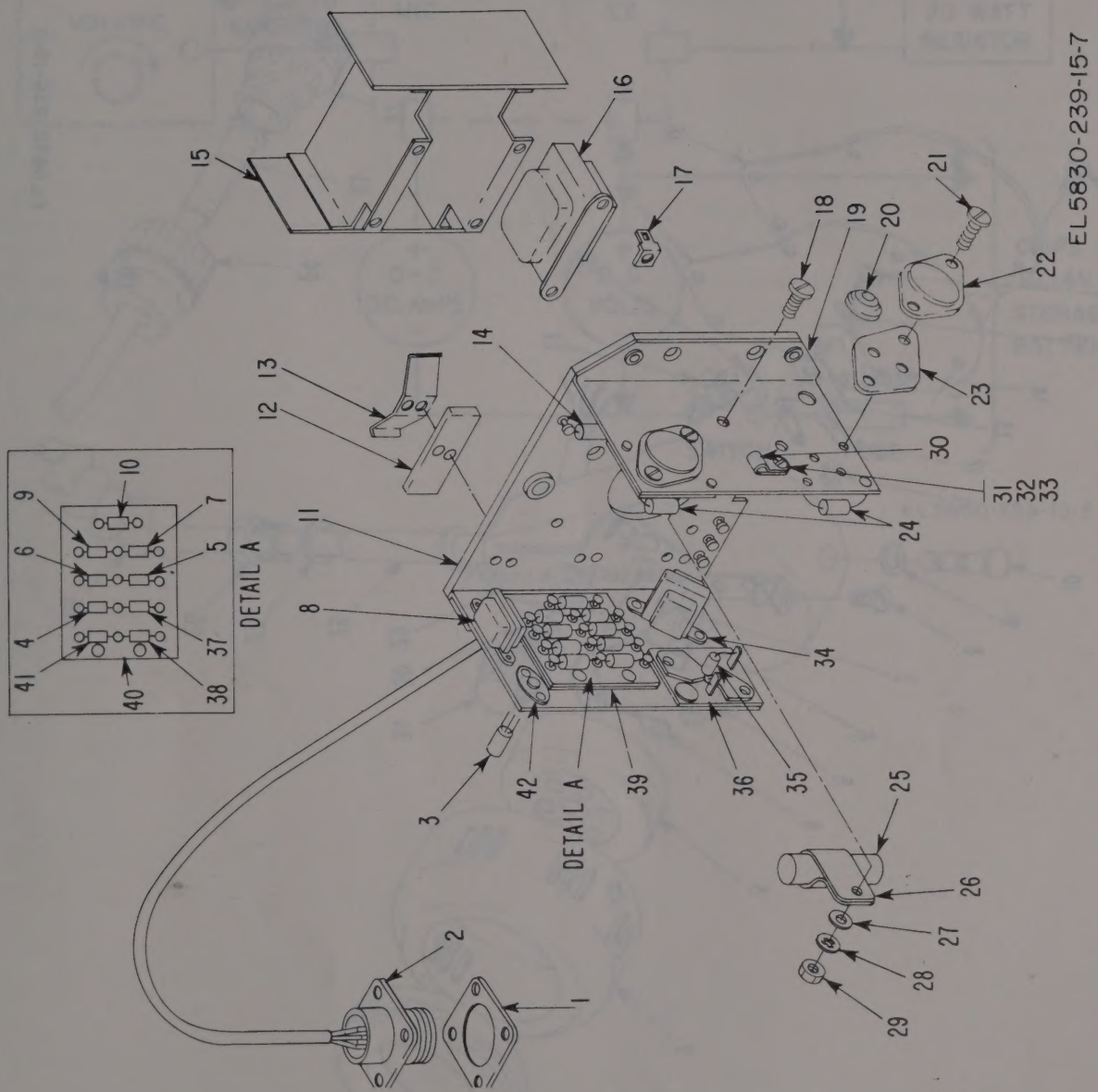


Figure 6-2. Amplifier subassembly.

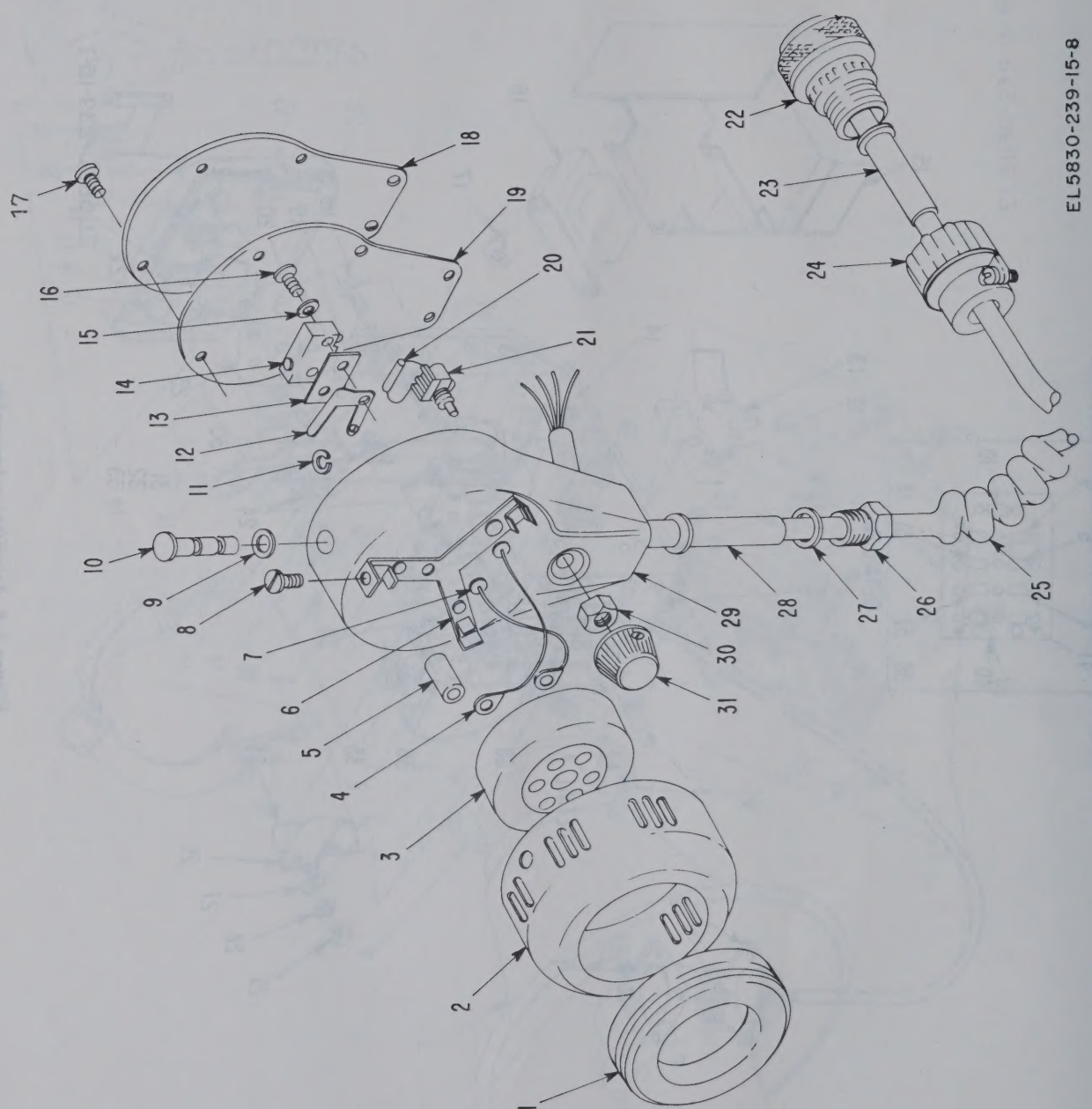


Figure 6-8. Microphone assembly.

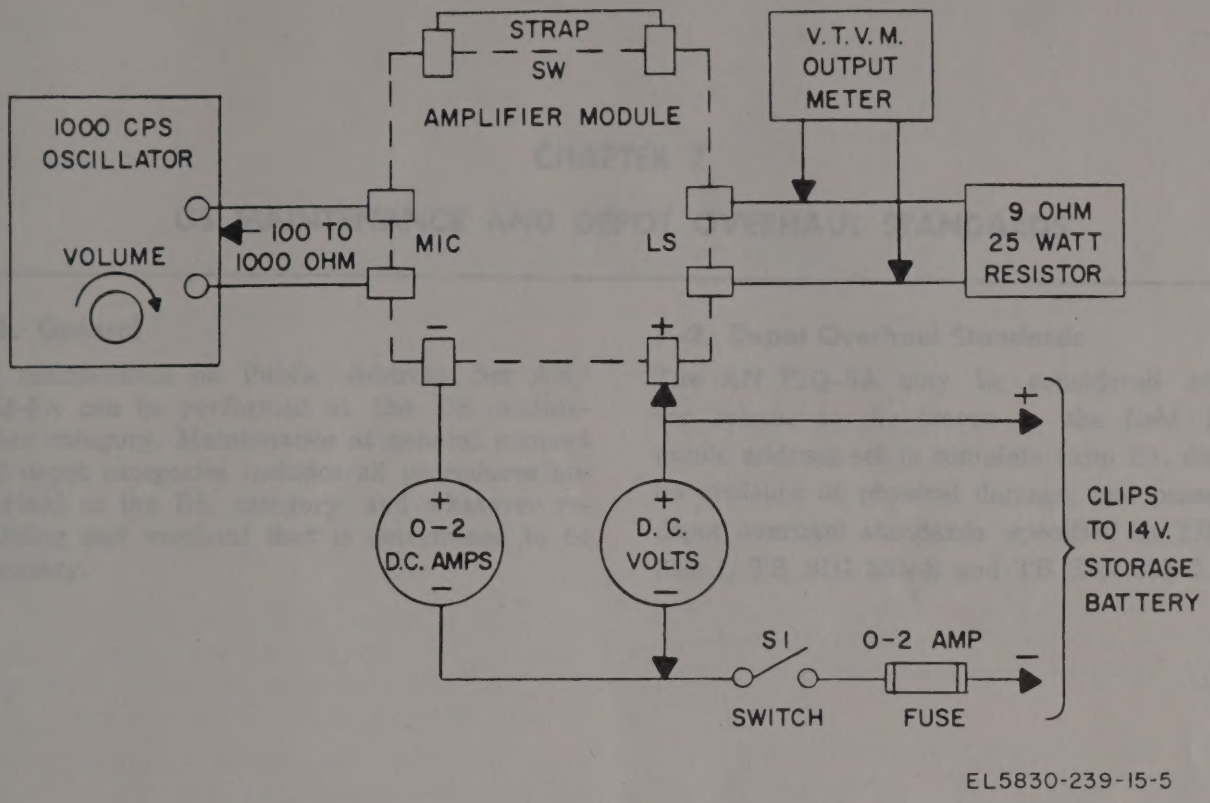
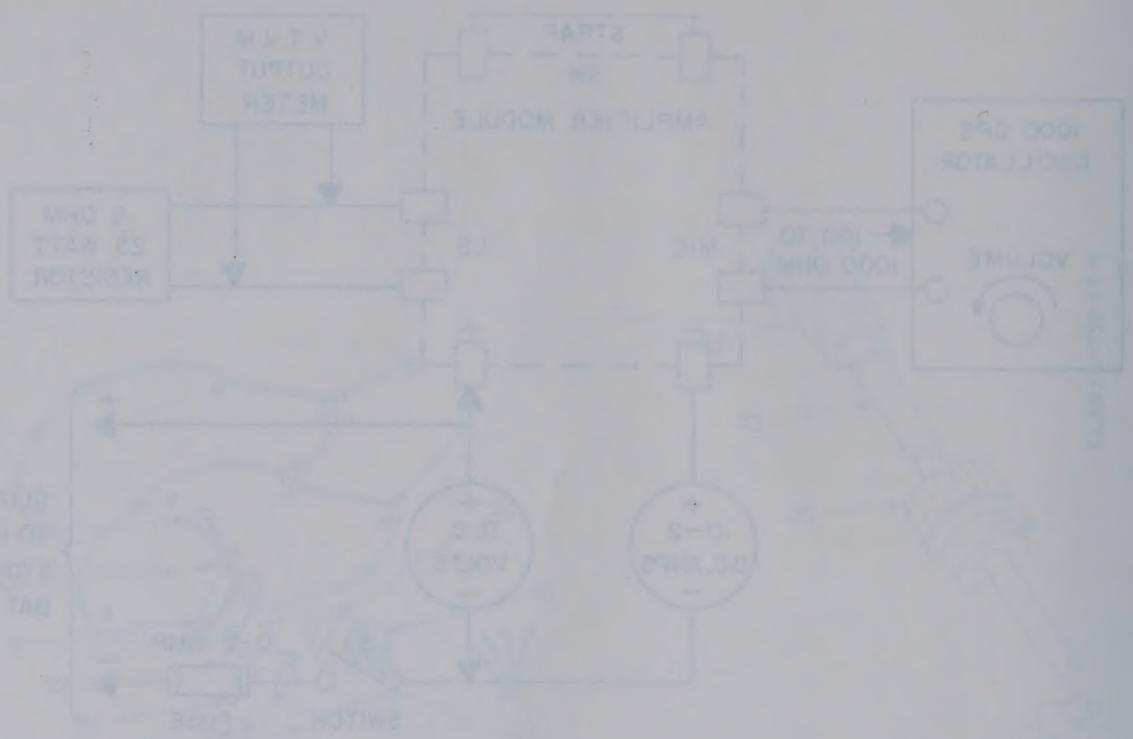


Figure 6-4. Test setup.



CHAPTER 7

GS MAINTENANCE AND DEPOT OVERHAUL STANDARDS

7-1. General

All maintenance on Public Address Set AN/PIQ-5A can be performed at the DS maintenance category. Maintenance at general support and depot categories includes all procedures authorized at the DS category and whatever rebuilding and overhaul that is determined to be necessary.

7-2. Depot Overhaul Standards

The AN/PIQ-5A may be considered suitable for reissue to the troops in the field if the public address set is complete (app B), displays no evidence of physical damage, and passes the depot overhaul standards specified in TB SIG 355-1, TB SIG 355-2 and TB SIG 355-3.

CHAPTER 7

GS MAINTENANCE AND DEPOT OVERHAUL STANDARDS

7-1. General

All maintenance on Public Address Set AN/PIQ-8A can be performed at the DS maintenance category. Maintenance at general support and depot categories includes all procedures authorized at the DS category and whatever rebuilding and overhaul that is determined to be necessary.

7-2. Depot Overhaul Standards

The AN/PIQ-8A may be considered suitable for reissue to the troops in the field if the public address set is complete (any Bl. displays no evidence of physical damage and passes the depot overhaul standards specified in TB SIG 856-1, TB SIG 856-2 and TB SIG 856-3

CHAPTER 8

SHIPMENT AND LIMITED STORAGE AND DEMOLITION TO PREVENT ENEMY USE

Section I. SHIPMENT AND LIMITED STORAGE

8-1. Disassembly of Public Address Set

a. If the extension cord (fig. 1-1) has been used for remote operation, disconnect the cord. Coil the cord, and place it in the carrying case cover.

b. Remove the 10 BA-30 batteries from the electronic megaphone housing (fig. 2-1) by loosening the two snap fasteners that secure the rear cover to the housing and lifting of the cover.

c. If the public address set was used on a stand, detach it from the stand by removing the single screw connecting the bottom of the trigger handle to the stand.

d. Place the public address set and the cable assembly extension in the carrying case. Place the top on the carrying case.

8-2. Repackaging for Shipment or Limited Storage

a. Open the battery cover by loosening the two safety latches on either side, and remove the batteries. Close the cover.

b. Place the public address set in the carrying case and the extension cable in the cover of the carrying case.

Caution: **If the unit is to be stored for an extended period of time, particularly in a moist area or climate, desiccant must be placed inside the carrying case prior to closing and further repackaging. Desiccant (MIL-D-3464) is listed in SB 38-100.**

c. Place cover on carrying case, and close the six latches securely. Place the case in grade A paper and place in a corrugated carton with a protective cushion in the bottom of the carton. Place protective cushions all around the carrying case and one protective cushion on top.

Note. All materials required for these procedures are found in SB 38-100.

d. Secure the top of the corrugated carton with pressure-sensitive tape. Place the corrugated carton in a barrier bag and wrap with waterproof paper.

e. Place the wrapped carton in a wooden box. Place the top on the box and nail in place.

Section II. DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

8-3. Authority for Demolition

a. The demolition procedures in paragraph 8-4 will be used to prevent the enemy from using or salvaging this equipment. Demolition of the AN/PIQ-5A will be accomplished only upon the order of the commander.

b. Thorough demolition of the AN/PIQ-5A will be accomplished through the use of procedures outlined in International Standardization Agreement STANAG 2113 "Destruction of Military Technical Equipment." Methods of destruction should achieve damage to equipment and essential spare parts so that it will not be possible to restore the equipment to a usable condition in the combat zone either by repair or cannibalization. The reporting of the destruction of equipment is to be done through command channels.

c. If a destruction plan is not provided by higher authority, one should be prepared by the organization using the equipment. In this plan, personnel are assigned specific destruction tasks, but all personnel in the using organization should be familar with all aspects of the complete destruction plan. The plan must be ade-

quate and easily carried out in the field and must provide for as complete a destruction as available time, equipment, and personnel will permit. Because the time required for complete destruction may not always be available, the destruction plan must establish priorities so that essential parts of the equipment will be destroyed in the order of their importance. Systematic destruction of the same important units of equipment of a given type will prevent the enemy from learning the important features of the equipment by cannibalization of partially destroyed equipment. Adequate destruction of some of the AN/PIQ-5A should always be accomplished rather than partial destruction of all units. Which of the methods listed in paragraph 8-4 is to be used depends on the time available for destruction.

8-4. Methods of Destruction

a. Destruction Priority. STANAG 2113 outlines the general priorities for any equipment which is to be destroyed. These priorities, as applied to the AN/PIQ-5A, are listed below:

(1) Microphone and speaker assembly.
(2) Batteries.
(3) Amplifier and amplifier housing.
(4) All cables and connectors.

b. Smash. Smash the controls, resistors, capacitors, switches, antenna, and other interior parts.

c. Cut. Cut the cords, cables, and wiring.

d. Burn. Burn the cords, wiring, manuals, and components.

e. Bend. Bend the panels, casing, and connectors.

Warning: **Be extremely careful with explosive and incendiary devices. Use these items only when the need is urgent.**

f. Explosives. If explosives are necessary, use firearms, grenades, or TNT.

g. Disposal. Burn or scatter the destroyed parts in slit trenches, foxholes, or other holes, or throw into nearby streams.

APPENDIX A
REFERENCES

The following publications contain information applicable to the operation and maintenance of the Public Address Set AN/PIQ-5A.

DA Pam 310-1	Consolidated Index of Army Publications and Blank Forms.
TM 11-6625-200-15	Operator's, Organizational, Direct Support, General Support, and Depot Maintenance Manual: Multimeters ME-26A/U (NSN 6625-00-360-2493), and ME-26B/U and ME-26C/U (NSN 6625-00-646-9409), and ME-26D/U (6625-00-913-9781).
TM 11-6625-255-14	Operator's, Organizational, Direct Support and General Support Maintenance Manual: Spectrum Analyzer TS-723A/U, TS-623B/U, TS-723C/U, and TS-723D/U (NSN 6625-00-668-9418).
TM 11-6625-261-12	Operator's and Organizational Maintenance Manual: Audio Oscillators TS-382A/U, TS-382B/U, TS-382D/U, TS-382E/U, TS-382F/U.
TM 11-6625-366-15	Operator's, Organizational, Direct Support, General Support, and Depot Maintenance Manual: Multimeter TS-352B/U (NSN 6625-00-553-0142).
TM 11-6625-539-15	Operator's, Organizational, Field, and Depot Maintenance Manual: Transistor Set TS-1836/U.
TM 38-750	The Army Maintenance Management System (TAMMS).

APPENDIX B

BASIC ISSUE ITEMS

Section I. INTRODUCTION

B-1. Scope

This appendix lists items comprising an operable equipment and those required for installation, operation, or operator's maintenance for Public Address Set AN/PIQ-5A.

B-2. Explanation of Columns

The following is a list of explanations of columns in section II.

a. Source, Maintenance, and Recoverability Codes (SMR) Column.

(1) *Source code (S).* The selection status and source for the listed item is the first code indicated in this column. The source code used and its explanation is—

Code	*Explanation*
P	Applies to repair parts that are stocked in or supplied from GSA/DSA, or Army supply system, and authorized for use at indicated maintenance categories.

(2) *Maintenance code (M).* The lowest category of maintenance authorized to install the item is indicated by the second code in this column. The maintenance category code and its explanation is—

Code	*Explanation*
C	Operator/crew

(3) *Recoverability code (R).* The recoverability code is the third code in this column. It indicates whether unserviceable items should be returned for recovery or salvage. Recoverability code and its explanation is —

Note. When no code is indicated in the recoverability column, the part will be considered expendable.

Code	*Explanation*
R	Applies to repair parts and assemblies that are economically repairable at DSU and GSU activities and are normally furnished by supply on an exchange basis.

b. Federal Stock Number Column. This column indicates the Federal stock number for the item.

c. Description, Column 3. This column includes the Federal item name and any additional description of the item which may be required. A part number or other reference number is followed by the applicable five-digit Federal Supply Code for Manufacturers.

Note. Usable on Code column is not used.

d. Unit of Issue, Column 4. The unit used as a basis of issue (e.g., ea, pr, ft, yd, etc.) is given in this column.

e. Quantity Incorporated in Unit Pack Column. Not used.

f. Quantity Incorporated in Unit Column. The total quantity of the item used in the equipment is given in this column.

g. Quantity Furnished With Equipment Column. This column lists the quantity of the item supplied for initial operation of the equipment and/or the quantities authorized to be kept on hand by the operator for maintenance of the equipment.

h. Quantity Authorized Column. Not used.

i. Illustrations Column.

(1) *Figure number (a).* The number of the illustration on which the item is shown is indicated in this column.

(2) *Item No. or reference designation (b).* The reference designation and/or item number callout used to reference the item in the illustration appears in this column.

B-3. Batteries

Dry batteries shown are used with the equipment but are not considered part of the equipment. They will not be preshipped automatically but are to be requisitioned in quantities necessary for the particular organization in accordance with SB 11-6.

B-4. Federal Supply Codes

This paragraph lists the Federal supply code with the associated manufacturer's name.

Code	*Manufacturer's name*
12431	Arkay International Div. of Compace Corp.
91505	Audio Equipment Co. Inc.

SECTION II. BASIC ISSUE ITEMS

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION Reference Number & Mfr Code USABLE ON CODE	(4) UNIT OF ISSUE	(5) QTY INC IN UNIT PACK	(6) QTY INC IN UNIT	(7) QTY FURN WITH EQUIP	(8) QTY AUTH	(9) ILLUSTRATIONS (a) FIG. NO.	(9) ILLUSTRATIONS (b) ITEM NO. OR REFERENCE DESIGNATION
	5830-985-9033	PUBLIC ADDRESS SET AN/PIQ-5A: 521000; 12431 (This item is nonexpendable.)						1-1	
		TECHNICAL MANUAL TM 11-5830-239-15	ea			1			
		NOTE: For technical manuals the quantity indicates the maximum number of copies authorized for packing (or issue) with the equipment. Where a number of these equipments are concentrated in a small area, the quantity on hand may be reduced to practical levels.							
--C-R	5830-907-5183	LOUDSPEAKER ASSEMBLY: 521059; 12431	ea		1	1		1-1	
P-C-R	5830-902-3725	CASE, PUBLIC ADDRESS SET: 521050; 12431	ea		1	1		1-1	
P-C-R	5965-908-1402	MICROPHONE ASSEMBLY, MAGNETIC: 521042; 12431	ea		1	1		1-3	
P-C-R	5995-834-1533	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL (25 ft lg extension) 521057; 12431	ea		1	1		1-1	
P-C	5340-833-9821	STRAP, CARRYING: B-5891; 91505	ea		1	1		6-1	12
P-C	6135-120-1020	BATTERY BA-30: (1.5 v)	ea					6-1	13
		NO ACCESSORIES, TOOLS OR TEST EQUIPMENT ARE TO BE ISSUED WITH THIS EQUIPMENT							
		NO BASIC ISSUE ITEMS ARE MOUNTED IN OR ON THIS EQUIPMENT							

APPENDIX C

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

C-1. General

This appendix provides a summary of the maintenance operations for AN/PIQ-5A. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

C-2. Maintenance Function

Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

b. Test. To verify serviceability and to detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.

d. Adjust. To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.

e. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. Install. The act of emplacing, seating, or fixing into position an item, part, module (component or assembly) in a manner to allow the proper functioning of the equipment or system.

h. Replace. The act of substituting a serviceable like type part, subassembly, or module (component or assembly) for an unserviceable counterpart.

i. Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

j. Overhaul. That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (i.e., DMWR) in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

k. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours, miles, etc.) considered in classifying Army equipments/components.

C-3. Column Entries

a. Column 1, Group Number. Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.

b. Column 2, Component/Assembly. Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. Column 3, Maintenance Functions. Column 3 lists the functions to be performed on the item listed in column 2. When items are listed without maintenance functions, it is solely for purpose of having the group numbers in the MAC and RPSTL coincide.

d. Column 4, Maintenance Category. Column 4 specifies, by the listing of a "work time" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or

complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate "work time" figures will be shown for each category. The number of task-hours specified by the "work time" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. Subcolumns of column 4 are as follows:

C-Operator/Crew
O-Organizational
F-Direct Support
H-General Support
D-Depot

e. Column 5, Tools and Equipment. Column 5 specifies by code, those common tool sets (not individual tools) and special tools, test, and support equipment required to perform the designated function.

f. Column 6, Remarks. Column 6 contains an alphabetic code which leads to the remark in section IV, Remarks, which is pertinent to the item opposite the particular code.

C-4. Tool and Test Equipment Requirements (Sect. III)

a. Tool or Test Equipment Reference Code. The numbers of this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool or test equipment for the maintenance functions.

b. Maintenance Category. The codes in this column indicate the maintenance category allocated the tool or test equipment.

c. Nomenclature. This column lists the noun name and nomenclature of the tools and test equipment required to perform the maintenance functions.

d. National/NATO Stock Number. This column lists the National/NATO stock number of the specific tool or test equipment.

e. Tool Number. This column lists the manufacturer's part number of the tool followed by the Federal Supply Code for manufacturers (5-digit) in parentheses.

C-5. Remarks (Sect. IV)

a. Reference Code. This code refers to the appropriate item in section II, column 6.

b. Remarks. This column provides the required explanatory information necessary to clarify items appearing in section II.

(Next printed page is C-3)

SECTION II MAINTENANCE ALLOCATION CHART FOR

PUBLIC ADDRESS SET AN/PIQ-5A

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT.	(6) REMARKS
			C	O	F	H	D		
00	PUBLIC ADDRESS SET AN/PIQ-5	Inspect	0.3						A
		Service	0.3						B
		Test		0.5					J
		Overhaul					7.0	1 thru 6	
01	HOUSING ASSEMBLY	Inspect		0.2					C
		Service		0.2					D
		Replace	0.1						E
0101	CASE ASSEMBLY	Test			0.5			2,3	F
		Replace		0.2				2,3	
		Repair			0.8			2,3	G
0102	AMPLIFIER ASSEMBLY	Test			1.0			2 thru 6	F
		Replace			0.2			2,3	
		Repair			1.5			2,3	G
02	HANDLE ASSEMBLY	Inspect	0.1						H
		Test			0.5			2,3	
		Replace		0.2				2,3	
		Repair			0.8			2,3	G
03	LOUDSPEAKER ASSEMBLY	Test			0.5			2,3,4	
		Replace			0.2			2,3	
		Repair			0.8			2,3	G
04	MICROPHONE ASSEMBLY	Inspect	0.1						H
		Test			0.5			2,3,4	
		Replace		0.1				2,3	
		Repair			0.8			2,3	G
05	CABLE ASSEMBLY, EXTENSION	Test		0.2				3	I
		Replace		0.1				2	
		Repair		0.5				2,3	

SECTION III TOOL AND TEST EQUIPMENT REQUIREMENTS
FOR

PUBLIC ADDRESS SET AN/PIQ-5

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
1	O,F,H,D	TOOL KIT, ELECTRONIC EQUIPMENT TK-105/G	5180-610-8177	
2	O,F,H,D	TOOL KIT, ELECTRONIC EQUIPMENT TK-100/G	5180-605-0079	
3	O,F,H,D	MULTIMETER TS-352B/U	6625-242-5023	
4	F,H,D	AUDIO OSCILLATOR TS-382/U	6625-192-5094	
5	F,H,D	SPECTRUM ANALYZER TS-723/U	6625-668-9418	
6	F,H,D	TEST SET TRANSISTOR TS-1836/U	6625-893-2628	

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SECTION IV. REMARKS

REFERENCE CODE	REMARKS
A	OPERATIONAL CHECK.
B	CLEAN EXTERNAL SURFACE, PLUGS AND CONNECTORS.
C	CHECK BATTERIES TO SEE IF THEY ARE INSTALLED PROPERLY.
D	CLEAN BATTERY CONTACT SPRINGS.
E	REPLACE DEFECTIVE BATTERY.
F	ALL TESTS.
G	ALL INTERNAL REPAIRS.
H	CHECK EXTERNAL SWITCH.
I	CONTINUITY CHECK.
J	ISOLATION OF TROUBLE TO THE ELECTRONIC MEGAPHONE, THE MICROPHONE, OR THE EXTENSION CABLE.

By Order of the Secretary of the Army:

W. C. WESTMORELAND,
General, United States Army,
Chief of Staff.

Official:

KENNETH G. WICKHAM,
Major General, United States Army,
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NG: State AG (3); units—same as active Army except allowances of one (1) copy per unit.

USAR: None.

For explanation of abbreviations used, see AR 320-50.

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